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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,237	12/22/2003	Pazhayannur Ramanathan Subramanian	136721-1	6973

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GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER
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SHEEHAN, JOHN P

ART UNIT	PAPER NUMBER
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1742

MAIL DATE	DELIVERY MODE
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06/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/743,237	SUBRAMANIAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John P. Sheehan	1742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 48-56 is/are pending in the application.
- 4a) Of the above claim(s) 1-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/07 &amp; 5/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group II, claims 48 to 56 in the reply filed on September 29, 2006 is acknowledged.

### ***Claim Rejections - 35 USC § 112, First Paragraph***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 48 to 56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

I. In claims 1, the penultimate line, the newly claimed range of "from 5 volume percent to 30 volume percent" is considered to drawn to new matter in that the lower limit of "5 volume percent" does not support in the application as filed, see, MPEP 2163.05, Section III.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 48 and 53 to 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Benn et al. (Benn, US Patent No. 5,006,163 cited in the IDS submitted December 22, 2003).

Benn teaches a method of making a composite with a metallic matrix material and a plurality of particles by mixing the metallic matrix material with a plurality of particles to form a composite powder comprising a plurality of particles and a metal matrix material (column 4, lines 1 to 5), consolidating the composite powder (Benn, column 3, line 63 to column 4, line 20). The particles in the composite powder have a particle size of 5 to 500 nm (column 3, lines 34 to 36) which encompasses the particle size of 10 to 500 nm recited in the instant claims. In view of Benn's particle size of 5 to 500 nm, Benn's particles are considered to be nanoparticles and Benn's particle-metallic matrix material composite powder is considered to be a nanocomposite powder as recited in the instant claims. The metallic matrix material in the composite powder is a nickel base alloy as recited in the instant claims (column 3, line 54). Benn further teaches thermomechanically processing the nanocomposite compact (column 4, lines 15 to 35) as recited in the instant claims.

The claims and Benn differ in that Benn is silent with respect to the volume percent of particles in the finished nanocomposite.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because it would be well within the skill of one of ordinary skill in the art to determine the appropriate volume percent of nanoparticles to use in Benn's process for the purpose of Benn's disclosed process. Further, in view of Benn's silence with respect to the volume percent of nanoparticles, Benn's disclosure is considered to encompass all volume percents including the volume percent recited in the instant claims.

6. Claims 49 to 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Benn et al. (Benn, US Patent No. 5,006,163 cited in the IDS submitted December 22, 2003) as applied to claims 48 and 53 above, and in view of the admitted known prior art disclosed in the specification at page 7, paragraph 0026.

Benn teaches and is applied as set forth above.

It is admitted in the specification that mechanofusion, mechanical alloying and cryomilling are known methods of forming nanoparticles (specification, page 7, paragraph 0026).

The claims and Benn differ in that Benn does not teach mechanofusion, mechanical alloying and cryomilling to form the nanoparticles.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the use of the admittedly

Art Unit: 1742

well known methods of making powder particles for use in the known method taught by Benn does not lend patentability to the known method taught by each of Benn.

### ***Double Patenting***

Claims 48 to 56 are directed to an invention not patentably distinct from claims 53 to 74 of commonly assigned application Serial No. 10/743,236. Specifically, the claimed method in each of these two sets of claims overlap.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned application Serial No. 10/743,236, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Art Unit: 1742

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 48 to 56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 53 to 74 of copending Application No. 10/743,236. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed method in each of these two sets of claims overlap.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

8. Applicant's arguments and amendment filed April 6, 2007 have been fully considered and have been found persuasive with respect to the rejections based on

Gennari et al. and Rousset et al. and the rejection of claims 48 to 56 under 35 USC 112. but they are not persuasive with respect to the rejections over Benn.

9. Applicants argue that Benn teaches 2.5 to 4 volume percent nanoparticles while applicants' claims recite 5 to 30 volume percent nanoparticles. The Examiner is not persuaded. In making this argument applicants have not cited any passages in Benn that supports applicants' arguments nor could the Examiner find any passage in Benn in support of applicants' argument. Regarding the volume percent nanoparticles the claims are rejected as set forth above in the newly explained rejections that take into account applicants' amendments to the claims.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

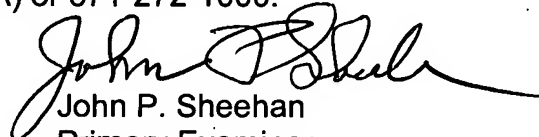
Art Unit: 1742

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
John P. Sheehan  
Primary Examiner  
Art Unit 1742

jps